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"Solidarity in a competing world — fair use of resources"

Partnership in Fisheries – ZMT Projects along the West African Coast

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Abstract

The fisheries along the West-African coast is focused on small pelagic species of the upwelling ecosystem of the Canary current, especially off the Mauritanian and Senegalese coasts. The interplay between climate change, the potential adaptation of species, and the impact of fisheries on the coastal and offshore resources is only partially understood. Fisheries is an important source of income in the West African countries and understanding the factors driving changes in the coastal ecosystems is essential for the sustainable management of this resource. The Leibniz Center for Tropical Marine Ecology participates in several bi- and trilateral projects and activities to provide a scientific basis for the resource management in the region. In this talk we will present our current projects AWA and HARVEST. AWA (Ecosystem Approach to the management of fisheries and the marine environment in West African waters) is a trilateral project among German, French and West African institutions to investigate the stocks of small pelagic fish species in the Canary Current. In the Sine Saloum we analyse the combined effects of reduced freshwater inputs, intense evaporation, and a low gradient in the lower estuary on the nursery function of this estuary for coastal fishes. We combine these land-based investigations with ship-based expeditions (FRV Walther Herwig in 2014 and 2015, and RV Meteor in August 2016) to assess the outreach of shallow water areas such as the Banc d'Arguin and the Sine Saloum estuary to shelf waters. HARVEST (Harvest behaviour in common pool resource systems: data analysis and modelling of dynamic decision making) is a cooperative project with the African Institute for Mathematical Sciences (AIMS) in Mbour, Senegal that aims at (1) conducting a series of human behavioural experiments with a new, state-of-the-art mobile application to identify relevant factors influencing fish harvest behaviour and (2) develop and apply a traitbased model to describe adaptive human harvest following a dynamic tradeoff between current and perceived future harvest.

Keywords: Climate change, fisheries, modelling

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